

REMARKS

The foregoing Preliminary Amendment is requested in order to delete the multiple dependent claims and avoid paying the multiple dependent claims fee.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Early action on the merits is respectfully requested.

Respectfully submitted,

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Claims:

5 22. A method for controlling an overactive bladder,
comprising the steps:
- detecting nerve signals from nerves innervating
the bladder;
- detecting a bladder event from the nerve sig-
nals;
- generating electrical pulses in response to the
detected event;
- stimulating afferent nerves using the generated
electrical pulses in order to inhibit detrusor contrac-
tion of the bladder.

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20 23. A method as defined in claim 22, wherein the de-
tected nerve signals primarily come from afferents inner-
vating mechanoreceptors in the bladder wall.

25 24. A method as defined in claim 22, wherein the de-
tected nerve signals come from efferent nerve fibres in-
nervating the bladder.

30 25. A method as defined in claim 22, wherein two dif-
ferent signals are used to detect a detrusor contraction,
the first signals coming from afferent nerves innervating
the bladder, and the second signals coming from efferent
nerves innervating the detrusor muscle.

35 26. A method as defined in claim 22,
wherein neural circuits inhibiting bladder contraction
are stimulated by activating an inhibitory spinal reflex

by stimulating afferent nerve fibres innervating mechano-receptors located in the glans of the penis or clitoris.

27. A method as defined in claim 26, wherein a stimulation electrode is located at a nerve belonging to the group consisting of a dorsal penile/clitoris nerve, a pudendal nerve, an extradural sacral nerve root or an intradural dorsal sacral nerve root.

10 28. A method as defined in claim 22, wherein both a detecting electrode and a stimulation electrode is located at either the intradural dorsal sacral nerve roots or the extradural sacral nerve root.

15 29. A method as defined in claim 28, wherein the dorsal sacral nerve roots belong to the group S2-S4.

30. A method to estimate bladder volume, comprising the steps:

20 - detecting nerve signals from nerves innervating the bladder;

- estimate bladder volume in response to the detected signals using signal-processing methods.

25 31. A method as defined in claim 30, wherein the bladder volume is estimated from the amplitude of the detected nerve signal.

30 32. A method as defined in claim 30, wherein the bladder volume is estimated from the time between two detected nerve signals derived from two consecutive detrusor contractions.

33. A method as defined in claim 30, wherein the bladder volume is estimated from both the amplitude of the detected nerve signal and from the time between two detected nerve signals derived from two consecutive detrusor contractions.

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10 34. A method as defined in claim 30, comprising the further steps of: transmitting, from a transmitter placed inside the body of a user, a signal when a predetermined threshold is exceeded, receiving the signal with a receiver placed outside the body of a user, actuating an alert in response to the received signal for alerting the user that a given threshold value for the bladder volume has been reached.

15 35. An apparatus for estimating bladder volume, comprising:

- sensor means for sensing nerve signals from nerves innervating the bladder;
- a unit capable of estimating bladder volume in response to the detected signals using signal-processing methods.

20 36. An apparatus as defined in claim 35, wherein the unit is capable of deriving a bladder volume from the amplitude of the detected nerve signal.

25 37. An apparatus as defined in claim 35, wherein the unit is capable of deriving a bladder volume from the 30 time between two detected nerve signals derived from two consecutive detrusor contractions.

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38. A apparatus as defined in claim 35, wherein the unit is capable of deriving a bladder volume from both the amplitude of the detected nerve signal and from the time between two detected nerve signals derived from two consecutive detrusor contractions.

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39. A apparatus as defined in claim 35, further comprising transmitting means, receiving means and actuating means,

10 - said transmitting means together with the unit being capable of being placed inside the body of a user;

- said receiving means, when placed outside the body of a user, being capable of receiving a signal from said transmitting means, when placed inside the body of a user, and passing the signal to actuating means for alerting the user that a given threshold value for the bladder volume has been reached.